

Residual soils should be sampled in accordance with AASHTO T207 or ASTM D1587 specifications. Unlike clays that are typically sampled using Shelby tubes, residual soils require delicate and deliberate handling to insure the viability of test specimens. The procedure currently used by the Materials and Tests Unit of NCDOT to cut and extract specimens from Shelby Tubes utilizes a custom manufactured Shelby tube vise and large pipe cutter, shown in figure E.1, has proven to effective in creation of triaxial specimens.

The method is as follows:

- 1) If this is the first specimen from the Shelby tube, cut one inch from the beveled end with a 3 inch pipe cutter to remove disturbed/contaminated soil.
- 2) Mark a six inch length from the cut end of the tube and note the direction the orientation of the tube.
- 3) Place the Shelby tube in the tube vise and use a 3 inch pipe cutter to cut the Shelby tube at the six inch mark. Tighten the clamp slowly to insure even cutting and limit deformation of the tube. It should take more than 25 turns to cut the tube.
- 4) When cutter penetrates the tube and the entire circumference is separated, use a wire saw or knife edge to cut the soil inside.
- 5) Reseal the remaining tube length with a protective cap.
- 6) Using a vertically oriented jack extractor with a retaining ring appropriate for Shelby tubes, extrude the soil specimen insuring the soil moves in the same direction as when it was sampled.